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WITHIN OUR BORDERS

Heart River Project
Education Is Big Business
Deputy Provincial Treasurer
Tree Planting Campaign
A Picture Page

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Sept. 15

Heart River Diversion Project

Alberta Government Program To Provide Essential Flood Control and Water Supply For North Area

Development of a portion of the Peace River Country will be encouraged by the Heart River diversion project of the water resources branch of the Alberta Government.

This important multi-purpose scheme will provide the adjacent district with essential flood control. It will be a few years before the other benefits, water supply and possibly hydro power, are available. The first step relative to flood control will go into operation when the dam is completed in October. Straightening of some of the curves in the very twisted unruly adjoining West Prairie River is the second step toward complete flood control of the area. Estimated cost of the project's first step is $100,000.

Large Area Concerned

The dam being constructed on the Heart River is located about 12 miles south-east of McLennan or 22 miles north-east of High Prairie. The most seriously flooded district is the 72 square miles surrounding the junction of the Heart and West Prairie Rivers near High Prairie. Fairly black alluvial soil supports many good farms in this well settled section. Upstream from the dam site where flooding causes far less devastation the settling is extremely sparse. Owners of the small amount of land upstream which will be flooded because of construction of the dam will be compensated by the Provincial Government. The area presently damaged by flooding is situated at the bottom of a wide basin. High speed run-offs originating in the Swan Hills to the south roar down the slopes gouging trails leaving considerable destruction behind. The resulting erosion plays havoc with the crops. These terrific run-offs uproot trees which are 50 to 100 feet in length and hurl them into the streams. Persistent log jams and silt deposits in the West Prairie River prompt the flooding. On occasion, spring floods have been so bad it was impossible to seed crops, while at other times seeded crops have been washed out. A few farms have been abandoned because of this destructive act of nature but now because of the work being done by the Provincial Government the rampaging streams eventually will be tamed.

View Course Outlined

The diverted Heart River will be capable of handling the troublesome backwash from the West Prairie River and distribute it without causing damage.

The dam located about four miles east of the eastern tip of Lake Winagami will force its upstream flood water through a natural creek, a reservoir which is Hay Lake enlarged many times, a one and a half mile diversion canal, then into Winagami Lake. After flowing through the lake the water passes through a two mile outlet canal at the south end of the lake. The diverted water then runs about four miles through a creek before rejoining the natural course of the Heart River. Purpose of the canal at the south end of Winagami Lake is to control the water level of the lake. This controlled outlet will maintain a steady flow of water downstream which is required by the farmers and their stock. Control action also protects the dam by regulating the runoff.

Salt Water Lakes

Winagami Lake presently is filled with salt water analysed as unfit for consumption by human being or beast—fish cannot live in the lake. It is hoped that the fresh water from the diverted Heart River will replace completely the water of Winagami Lake. This will be done by a flushing or replacing process with the constant flow from the Heart River gradually replacing the lake water. A faster but less practical and more costly method would entail pumping the lake water out.

When the water in Winagami Lake is suitable for drinking it will be piped or ditched three miles from the north end of the lake to McLennan. The town of McLennan is situated on the south of Kimiwan Lake, also unfit for use by man or beast. This body of water too will be flushed out by the new water system. A pipeline would be the better transportation method because it

(See "Heart River Project" on Page Two)

More than 100,000 cubic yards of earth were excavated to make this outlet canal at the south end of Winagami Lake.

Shown above is a power shovel in operation during construction of the coffer dam at the permanent dam site of the Heart River diversion project.

Reg Bailey, right, project engineer, checks the scheme's plans with Don Harvey, junior engineer. (Alberta Government Photographs)

Educating Young Alberta Is Big Business

Education Grants Total $7,800,000 With 9,115 Persons Employed

The business of educating the boys and girls of Alberta is big business. It employs 9,115 people with an annual gross payroll of approximately $20,000,000. The total cost of education in Alberta is $25,000,000 per year.

In comparison, the meat packing industry employs 4,000 persons with an annual payroll of $7,000,000. The mining industry, one of the largest in the Province, employs 9,000 persons and supports an annual payroll of $21,000,000.

More than 175,000 persons are concerned directly with education in Alberta, while thousands more are concerned indirectly in the same vital field. The department of education is responsible for distributing a larger portion of income account than any other government department. Of the total appropriation approximately 70 percent goes direct to school boards in the form of school grants.

Assist Local Boards

Purpose of school grants is to assist the local boards with the ever-increasing costs of operating their schools. School expenses form a big item in any district, and the local ratepayers, despite their burden of school taxes, cannot carry the whole cost by themselves. The Provincial government assumes a share, varying with the number of teachers employed, the total assessed value of property in the district, provision for transportation of pupils and other factors. In eleven school divisions immediately north of the city of Edmonton education grants in 1949 met 49.59 percent of the total cost. That year the highest grant paid to any one of them was 70.99 percent of the total expenditure on education while the lowest share was 32.48 percent of the total expenditure.

This range in percentages is closely related to the basic policy of the department of education which is to implement as far as possible the principle of "equality of opportunity." This does not mean that every village school can be equipped like one in a city centre, but it does mean each school should be able to offer a broad and progressive program of training. It means, further, that opportunity for high school should be made available to the greatest possible number of boys and girls, no matter where they live.

Various Grants Outlined

It is on this basis that school grant regulations were formulated. There is, first of all, "the basic teacher grant." This begins at $450 per annum for each teacher employed on a yearly basis, and goes as high as $1,500 for special teachers charged with the training of handicapped children. Next is a conveyance grant which consists of $2.40 to $9.20 for each day's operation of a school bus, based on the normal pupil load and return trip mileage. Alternatively, the Province pays 35 percent of a school board's expenditure made to parents for conveying their children to a distant school or for boarding their children. There is a dormitory grant of $50.00 per annum for each pupil accommodated in a dormitory, an equipment grant which pays one-third of the cost of each item of approved permanent equipment costing $10.00 or more, and a night school grant of $2.50 for each two-hour session held.

Special encouragement is provided by grants to schools in isolated districts and unorganized school territory. One of these is an "isolation bonus" by which up to $250 per annum is paid to those teaching in these districts. Another is payments to parents up to $1.50 per day as a conveyance or boarding allowance, as well as assistance paid in tuition fees for each student in unorganized territory. A special grant may be paid to assist Mission or other schools in unorganized school territory.

Capital costs also are assisted by grants. Under this category any rural district, upon its establishment, may be paid up to $4,000 to be applied toward the cost of a first school building. All boards may receive substantial assistance for new building construction through the School Borrowing Assistance Act.

Equalization of Opportunity

The largest grant (approximately 50 percent of the total appropriation) is the "Equalization Grant." This is based on the assessment of the school division or district and brings into operation the principle of equalization of opportunity. It is paid to low assessed districts in order to provide the children of such districts with educational opportunities as equal as possible to those living in areas of higher assessments.

Total of these various grants in 1950 will be $7,850,000, emphasizing the increased costs of education. This amount is four times greater than 1940 when the total paid by the department for the same purpose was $1,948,300.37. During those same ten years the cost per pupil in the Province (paid by direct school taxes and government grants) increased approximately from $60 to $165, or an increase of 275 percent. From these figures it is obvious that the Provincial government is assuming a steadily increasing share of the total costs of education.

HEART RIVER PROJECT

(Continued from Page One)

could be operated year-round while a ditch would freeze up during the winter necessitating a large storage system.

There is no overflow from Winagami or Kimiwan Lakes. Therefore, the constant beating of the sun's rays on these bodies of water absorbs all the hydrogen leaving a deposit of salt in the lakes. There is an excellent beach on the east side of Winagami Lake. At the present time the water level is so low that the beach is in poor condition.

Lacks Drinking Water

From McLennan the natural drainage slope is westward to the Little Smoky and Smoky Rivers. This natural drainage basin includes the towns of Donnelly, Falher and Girouxville. Reed Lake is the high point in the westward flow from McLennan. Incidentally, according to the Indians, the Smoky River has large deposits of alum in its banks and bed. When rains contact the alum-lined banks a chemical reaction causes smoke-like clouds to rise, therefore the name Smoky River.

It is surprising but true that good drinking water was easily obtainable throughout Alberta's southern drought country while a natural water well almost is unknown in the Peace River country. The Province's southern area has been turned into a fertile district by irrigation programs. Consumption of soft drinks in the Peace River district is very high because of the lack of good drinking water. McLennan's drinking water is now hauled in by tank cars 30 miles from the west at Watino where it is obtained from the Smoky River. Large quantities of water are required by the Northern Alberta Railway at McLennan, its divisional point. This supply too must be hauled in, therefore, the project also will assist northern railroading. Many towns and rural districts get their water supply by melting ice stocks built up during the winter months.

Obstacles Encountered

Many centres in the district are without sewage systems because of the lack of a water supply. This disadvantage will be remedied when the new supply system starts operating.

Following a survey the construction work began just over a year ago with Reg Bailey, Edmonton, as the engineer in charge of the project. The diversion canal and the spillway were excavated last year. Crews have encountered various obstacles. They worked in swamp moss land while digging the spillway and diversion canal which required log paths to keep the machines from sinking out of sight. When a machine passed over a small portion of the knitted logs the section would have to be moved to the front of the path to permit advancement. Ice lenses made it compulsory to do considerable blasting.

More difficulties were met by the engineers this summer when they began work on the dam's foundation. Layers of porous sand and gravel containing very active springs required installation of filters and drains to protect the foundation.

Valuable Service Provided

The Hudson's Bay Drilling Company provided a valuable service when its seismograph crews recently punched 10 holes about 100 feet deep. This provided quick and detailed information about the underlying strata and helped determine the depth of the key trench and further draining methods at the dam.

The length of the dam is 1,800 feet with a top width of 14 feet designed to be used as a permanent roadway. Width of the dam at the maximum section of the base in the river bed is 220 feet. Construction of the dam requires 40,000 cubic yards of dirt. About 400 cubic yards of reinforced concrete will be used in the spillway 200 feet west of the dam to provide a firm and fixed entrance for the gates. The drop at the spillway is specially designed to control the velocity in order to avoid erosion of the canal banks. The spillway will be about 15 feet deep. Approximately 25 feet will be excavated behind the spillway to make the bottom of the canal level with the river bed so the velocity of the water will not be too great and washout the canal. The upstream slope of the dam is covered by a gravel layer and also large boulders (riprap) to protect the surface against water erosion.

Hydro Possibilities Studied

Possibilities of hydro power being supplied by the Heart River diversion project are being studied by a utilities company. There is not sufficient waterhead created at the present time but a possible site is 12 miles downstream from the dam if water can be brought back to the river from Winagami Lake creating a 50-foot waterhead. The developed reservoir would maintain a constant flow all year.

This Alberta government project demanded detailed planning to design the scheme to meet requirements of Albertans for 20 or 30 years. The planners had to know what towns were destined for further development and what areas were most likely to be settled.

The engineers emphasize the long range nature of the whole project. Nature has created certain conditions in this area over many centuries and the correction of these conditions will require years.

The present project however will ameliorate the flooding problem and establish a large supply of fresh water for future use.

Deputy Provincial Treasurer Directs Public Fund Spending

(This is the sixth of a series of portrait articles on members of the Alberta Government Public Service. It is felt that to know members of the service is to know something more of the Government Services provided for the public. Mr. Hawkins is one of many hundreds of Civil Servants who have made the Public Service their career).

Kenneth J. Hawkins, deputy provincial treasurer, who was paid $100 for six weeks of work as a page boy in the Alberta Legislature back in 1913, now is the co-signer of millions of dollars of Alberta Government cheques.

As deputy provincial treasurer he is responsible for the expenditure of all public funds and also supervises the required bookkeeping. He also is responsible for the investment of surplus revenues.

One of the major jobs directed by Mr. Hawkins is the checking and preparation of department estimates which are submitted to the annual session for approval or revision. He and his staff compile the figures used in the Budget Address.

A highlight in Mr. Hawkins' government career came this year with the refinancing of Alberta's public debt resulting in a net saving of $24,191,000 to the Province. The re-organized plan on which Mr. Hawkins worked with other government officials was obtained at an average interest rate of 2.78 percent, the lowest interest rate in the history of Alberta's public debt.

Serves Many Committees

Mr. Hawkins is the administrator of the Self Liquidating Projects Act of 1950. Passing of this act established a $5,000,000 loan fund at two percent interest to municipalities for the construction of self-liquidating projects. He serves on several committees which include: chairman of the Alberta Industrial Corporation, chairman of the Alberta Rural Credit Corporation, treasurer of the Civil Service Welfare Fund Committee. Mr. Hawkins is a member of the University of Alberta Board of Governors, and a member of the School Borrowing Assistance Act Committee and the Building Association Advisory Board.

Born in Ontario 53 years ago, he moved to Edmonton with his family in 1912 later completing his high school in that city. In 1915 he started working for the Merchant's' Bank at Vegreville. After serving overseas during the First Great War he returned to the banking business with the Bank of Montreal until 1927, when he was appointed plant manager and purchasing agent for the Canada Biscuit Company in Edmonton.

Mr. Hawkins joined the Civil Service as an inspector of Co-operative Credit Societies 20 years ago. The following year, in 1931, he became supervisor of Co-operative Credit Societies, a position he held until he joined the R.C.A.F. in 1942. Mr. Hawkins returned to the government in 1945 as chief inspector of treasury branches. He was appointed deputy provincial treasurer in September, 1949, following the death of J. F. Percival.

KENNETH J. HAWKINS

100,000,000 Trees In 25 Years

A hundred million trees in 25 years is the objective of the Provincial Department of Agriculture's current tree-planting campaign.

Every year in Alberta, trees are planted on farms from the international Boundary to high up in the Peace River country. It is part of the Dominion and Provincial governments' policy to encourage the planting of more trees. In the present season 1,250,000 trees have been planted.

The young trees are supplied free to farmers from the Dominion Forestry Nursery Station at Indian Head, Saskatchewan, or from the Department of Lands and Forests in Edmonton. The Provincial tree nursery is located at Oliver.

Only exception to the free distribution are evergreen species for which the Dominion government make a nominal charge of $1 per hundred.

Summerfallowing Important

Orders placed with the station at Indian Head must be filed a year in advance of the intended planting and by January 31 of each year with the Alberta government. Considerable emphasis is placed on the importance of summerfallowing a year before planting. This is a part of the understanding on which orders are filled.

There are three principal types of planting—farmstead planting, field shelter belts, and roadside planting. It is estimated that tree-lined roads can save thousands of dollars annually in costs of snow removal. Therefore a single tree planting machine can often save several times its cost in a single winter.

While most planting has been done by hand the Provincial Department of Agriculture has loaned some localities tree planting machinery and operators on a demonstration basis. There is not enough of this machinery to serve the entire province and to move it from place to place would take years. Therefore some farmers have purchased mechanical tree planters and found them a good investment.

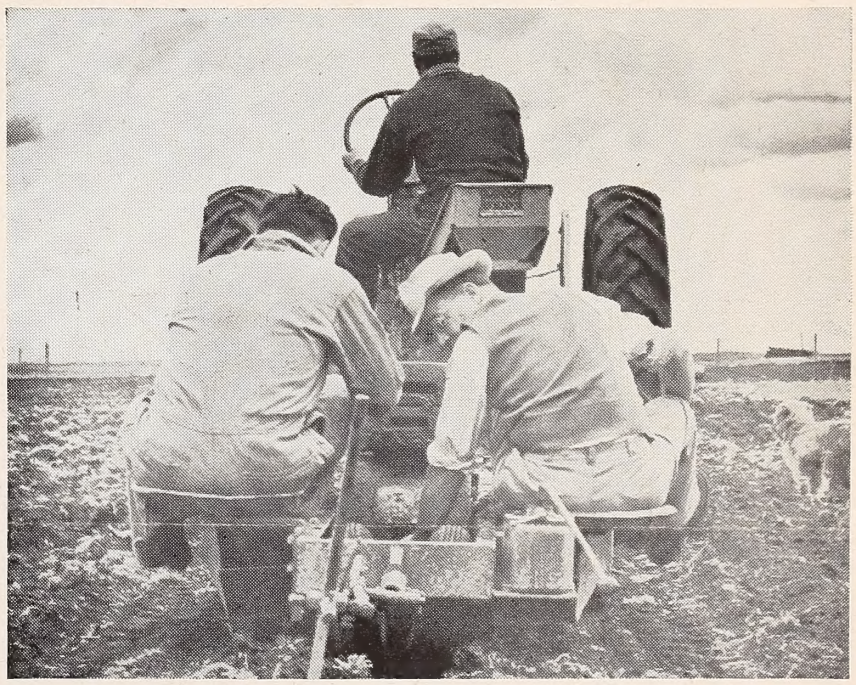
Two Principal Purposes

Trees serve two principal purposes; shelter and beautification. Increases of field and garden crops in tree sheltered areas is an obvious advantage. Shelter belts minimize the velocity of the wind preventing much soil-drifting.

Albertans are encouraged to preserve some of the native trees to protect water supplies especially on land not suited for agriculture such as sloughs, along lakes and creeks, and other similar types of land.

It has been found that the most popular species are carigana, Manitoba maple, poplar, willow, American elm, green ash, spruce and pine.

Trees require as much care as other crops. Trees are very valuable in the field of agriculture. Scientists have discovered that removal of timber is one of the chief causes of soil erosian. It is suggested that not less than 20 per cent of any farmland should feature trees.



This tractor-drawn government tree planting machine is used for demonstrations. It digs the furrow, replaces and packs the earth while the actual placing of the seedlings is done by the operators. (Alberta Government Photograph).

"Within Our Borders" is a publication designed to acquaint the people of the Province with the administration and services of the Alberta Government.

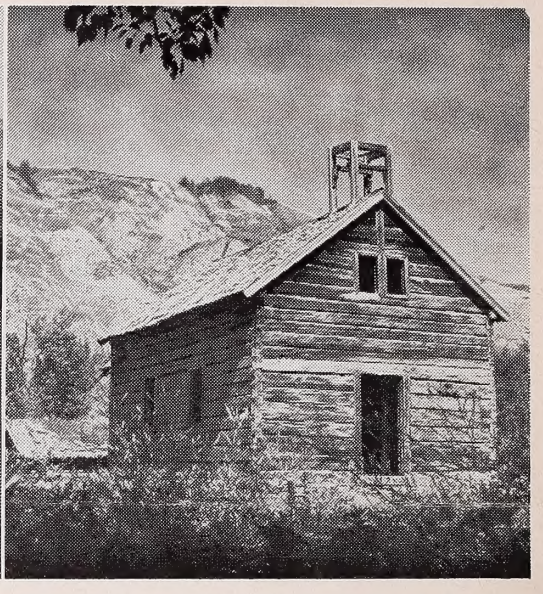
It is believed the many and varied services of the Government will be effective in the degree they are known and used.

Any material used is for immediate republication.

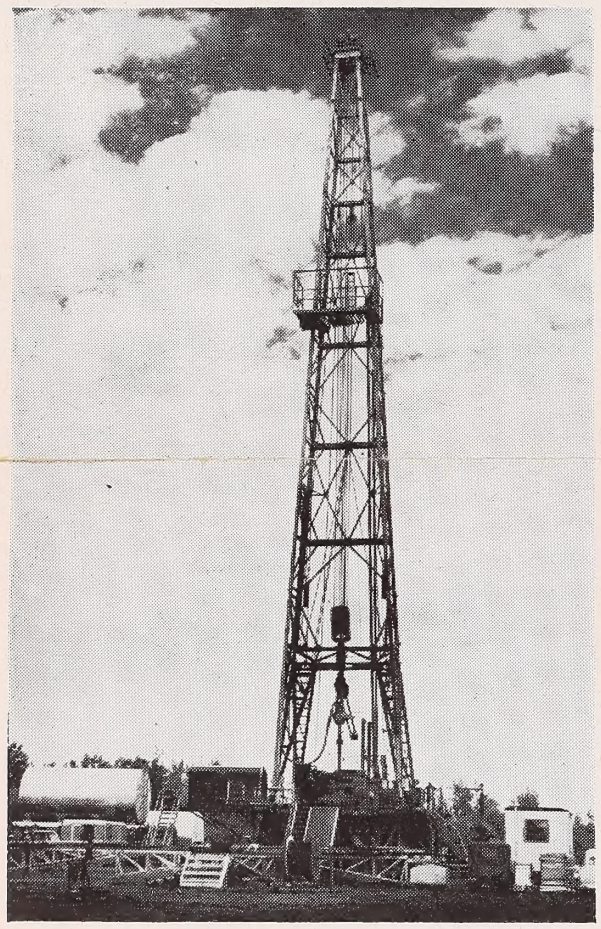
Correspondence should be addressed to "Within Our Borders", Legislative Buildings, Edmonton.

Looking over the Beaverlodge district from Saskatoon Mountain.

The picturesque Town of Peace River in the beautiful Peace River Valley.



The remains of this historical church built in the 1860's are near Dunvegan.



Important drilling operations have been conducted at this well near Whitelaw.

Camera Depicts Northern Alberta

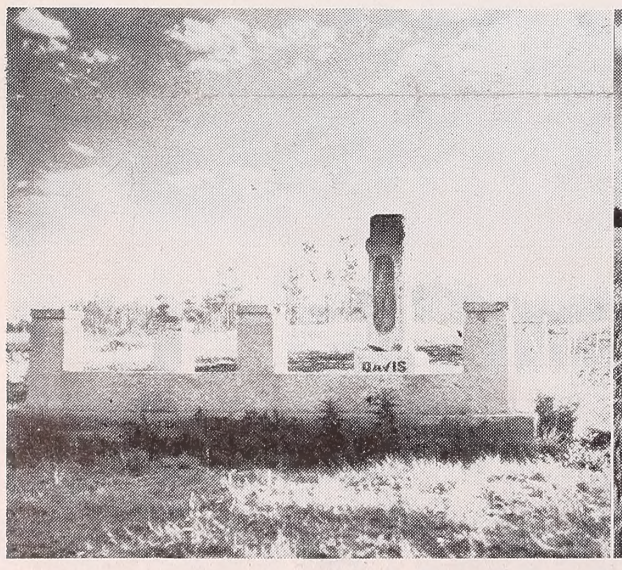
A "Within Our Borders" photographer and reporter recently made a trip through a portion of northern Alberta obtaining photographs and material for stories. The first story, "Heart River Diversion Project", appears in this issue. Other stories will be published in subsequent issues of Within Our Borders.

Through the medium of photography typical scenes of a trip through northern Alberta have been reproduced on this picture page. One of the features of the trip is the view obtained when looking down into the Town of Peace River from the grave of "Twelve-Foot Davis". The beautiful Peace River valley is enhanced by the scene created by the junction of the Peace and Smoky Rivers.

The legend of Twelve-Foot Davis is a reminder of the exciting colorful days experienced by the north's pioneers. He was given his nickname after he filed a mining claim on a 12-foot strip during the Caribou gold rush.

Following is the inscription of his tombstone: "H. F. Davis, born in Vermont 1820; died at Slave Lake 1893. Pathfinder, miner, pioneer, trader. He was every man's friend and never locked his cabin door."

A new entrance into Peace River town is being constructed by the Department of Public Works to replace the present long tricky hill-approach.



This is the grave of "Twelve-foot Davis" on a hilltop at Peace River.

A wheat field near Notikewin about 60 miles north of Grimshaw on the Mackenzie highway.

Evening on the Slave River.
(Alberta Government Photographs)